

REMARKS/ARGUMENTS

This paper is in response to the non-final Office Action of August 2, 2006. The amended claims introduce no new matter and are fully supported by the specification. Accordingly, Applicants respectfully request reconsideration of pending claims in view of the above amendments and the following remarks submitted in support thereof.

Claims 1-6 were canceled in response to a Restriction Requirement dated March 28, 2006. The Applicants reserve the right to file a divisional application covering the subject matter of the non-elected claims.

Rejections under 35 U.S.C. §102

The Examiner rejected claims 7, 8, 11, and 13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,302,707 by Aiyer. Applicant respectfully requests the withdrawal of the rejection because Aiyer fails to teach all aspects of Applicant's claimed invention.

Aiyer teaches the use of retractable conditioning tips in order to recondition a roughly textured pad wherein the roughly textured pad is used for polishing. Particularly, Aiyer teaches the use of conditioning tips that are permitted to move in a vertical direction, this is different than Applicant's claimed invention. The cited portions of Aiyer alleged to be analogous to Applicant's claimed invention demonstrate using a nickel film 208CN with protruding embedded diamond grit particles 208CD. However, Aiyer remains silent regarding the ability of the nickel film 208CN to alternate between a compliant state and rigid state.

Additionally, the alleged analogous second layer of Aiyer, the embedded diamond grit particles, are not configured to grind the surface of a substrate as

claimed by Applicant. As indicated in Figure 2, the conditioning structure 208, including the conditioning tips 208A-208C, are intended to contact the pad surface 210S and not the wafer (or substrate) 206.

Aiyer fails to teach that the nickel film 208CN is capable of alternating between a compliant state and rigid state. Aiyer also fails to teach that the second layer including an abrasive component configured to grind a surface of a substrate. Thus, Aiyer does not disclose Applicant's claimed invention. Applicant respectfully requests the withdrawal of the 35 U.S.C. § 102(b) rejection of claims 7, 8, 11, and 13 based on Aiyer.

The Examiner has rejected claims 7, 8, 11, and 13 under 35 U.S.C. § 102(b) as being anticipated by Kim et al. U.S. Patent 6,290,584. Applicant respectfully requests the withdrawal of the rejection because Kim fails to teach all aspects of Applicant's claimed invention.

Kim also fails to teach a first layer that is configured to alternate between a compliant state and a rigid state. Kim does state that the cited first layer is "a compliant wafer backing 118" (Column 4, Lines 25, 26). However, as shown in Figure 1, the cited second layer, polish pad 104, is not disposed over the compliant wafer backing pad 118. As shown in Figure 1, the second layer (polish pad 104) is separated from the first layer (compliant wafer backing pad 118) by a workpiece 120. Thus, Kim not only remains silent regarding the ability of the compliant wafer backing 118 to become rigid, but Kim also fails to disclose a second layer disposed over the first layer. Under the teachings of Kim, the second layer including an abrasive component configured to grind a surface of a substrate is found separated from the first layer by a workpiece 120. Thus, Kim fails to teach a second layer

disposed over a first layer, the second layer including an abrasive component to grind a surface of a substrate.

Furthermore, the cited portions of Kim fail to teach that the compliant wafer backing and the polish pad are configured as annular rings. As shown in the cited Fig. 1, both alleged analogous layers are shown as contiguous sheets and not as annular rings as claimed by Applicant.

Because Kim fails to teach all aspects of Applicant's claimed invention, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 102(b) rejection of claims 7, 8, 11, and 13 based on Kim.

The Examiner rejected claims 7, 8, 11, and 13 under 35 U.S.C § 102(e) as being anticipated by U.S. Patent No. 6,565,705 by Hung et al. Applicant respectfully requests the withdrawal of the rejection because Hung fails to teach all aspects of Applicant's claimed invention.

Hung also fails to teach a first layer configured to alternate between a compliant state and a rigid state. The Examiner cites the conditioning plate 304 and the plurality of grains 306 as being analogous to Applicant's respective first and second layers. However, the conditioning plate 304 is never described as being configured to alternate between a compliant state and a rigid state. Hung remains silent regarding the properties of the conditioning plate 304 other than stating that, "The conditioning plate 304 is fixed on one surface of the retainer ring 307. The conditioning plate 304 has such a thickness that the polishing of the wafer 302 is not adversely affected." (Column 3, Lines 24-27).

Similar to Aiyer, Hung also fails to teach that the alleged second layer is configured to grind a surface of a substrate. As shown in Figure 3 through Figure 5 of

Hung, the alleged second layer is shown surrounding the substrate 302, 402, and 502.

Therefore, Hung does not disclose Applicant's second layer configured to grind a surface of a substrate.

As Hung fails to teach all aspects of Applicant's claimed invention, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 102(e) rejection of claims 7, 8, 11, and 13 based on Hung.

The Examiner rejected claims 7, 8 and 14 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,083,083 by Nishimura. Applicant respectfully requests the withdrawal of the rejection because Nishimura fails to teach all aspects of Applicant's claimed invention.

The Examiner maintains that the disk 13 from Nishimura is analogous to Applicant's claimed first layer. However, Nishimura fails to teach that the disk 13 is configured to alternate between a compliant state and a rigid state. Nishimura teaches that the disk 13 is held in place using vacuum suction (column 4, lines 39, 40). Nishimura further teaches that the vacuum suction force is of a strength that keeps the deformation of the disk 13 within an allowable range (column 4, lines 40-48). Deformation of a disk using vacuum force is not the same as alternating between a compliant state and a rigid state as claimed by the Applicant. While deformation can result in the displacement of the disk, the rigidity of the disk remains unchanged. The teachings of Nishimura explicitly and repeatedly state that the vacuum force is not to deform the disk outside an allowable range (column 4, lines 39-55).

Furthermore, as shown in Figure 2 of Nishimura, the disk 13 that is alleged to be analogous to Applicant's first layer, and the abrasive cloth 14 that is alleged to be

analogous to Applicant's second layer, are not in the shape of annular rings as claimed by the Applicant.

Nishimura fails to disclose a first and second layer formed as annular rings as claimed by the Applicant. Furthermore, Nishimura's disclosure of a disk capable of deflection within a specific tolerance is different than Applicant's claimed alternating between a compliant state and a rigid state. Therefore, Nishimura fails to teach all aspects of Applicant's claimed invention and Applicant respectfully requests the withdrawal of the 35 U.S.C. § 102(b) rejection of claims 7, 8, and 14 based on Nishimura.

Rejections under 35 U.S.C. §103(a)

The Examiner rejected claims 9, 10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Aiyer, Kim et al., and Hung et al. (known henceforth as the primary prior art) in view of U.S. Patent No. 7,033,251 by Elledge et al. In light of the arguments contained herein, Applicants respectfully request that this rejection be withdrawn.

Claims 9, 10 and 12 are dependent upon independent claim 7, and as argued above, the primary prior art is deficient in teaching all aspects of Applicant's claimed invention. Regarding claim 9, as the primary prior art fails to disclose a first layer configured to alternate between a compliant state and a rigid state. The addition of Elledge's electromagnetic field generators would fail to effectuate a change between a compliant state and a rigid state of the alleged first layer in any of the primary prior art. The failure of the primary prior art to disclose a first layer configured to alternate between a compliant state and a rigid state are exacerbated when adding Elledge because there is nothing disclosed in the first layer of primary prior art capable of

responding to an electromagnetic field. Additionally, as shown in Figure 2, Elledge fails to cure a common deficiency in the primary prior art. Applicant claims a second layer disposed over a first layer, the second layer including an abrasive component to grind a surface of a substrate. As shown in Figure 2 of Elledge, the abrasive component of the planarizing pad is located under the substrate and not disposed over the first layer as specified by Applicant's claims.

Regarding claim 10 and claim 12, as argued above, the primary prior art fails to teach all aspects of Applicant's claimed invention. Also as argued above, Elledge fails to cure the deficiencies of the primary prior art. Thus, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103(a) rejection of claims 9, 10 and 12 based on the primary prior art and Elledge.

Similarly, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103(a) rejections of claims 15-17, and 19-24 based on Nishimura et al. in view of Elledge. Nishimura fails to teach an annular ring having a first side of a compliant layer affixed thereto and Elledge fails to cure Nishimura's deficiencies. As shown in Figure 2 of Elledge, the alleged analogous first layer and second layer are not shown as annular rings. For the same reasons as stated above, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103(a) rejection of claims 14-24 as being unpatentable over the primary art in view of Elledge, as applied in claim 9, 10, and 12 in further view of Nishimura et al.

SUMMARY

In view of the foregoing amendments and remarks, Applicants respectfully submit that the pending claims are in condition for allowance. Applicants respectfully

requests reconsideration of the application and allowance of the pending claims. If the Examiner has any questions concerning the present Amendment, the Examiner is kindly requested to contact Konrad Chan at (408) 774-6911.

If any additional fees are due in connection with filing this Amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. LAM2P470). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
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